

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 30 March 2001 (30.03.01)	
International application No. PCT/SE00/01463	Applicant's or agent's file reference 99070 PCT
International filing date (day/month/year) 10 July 2000 (10.07.00)	Priority date (day/month/year) 21 July 1999 (21.07.99)
Applicant SUNDSTRÖM, Fred	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

01 February 2001 (01.02.01)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was



was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer G. Bähr Telephone No.: (41-22) 338.83.38
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**NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

JOHANSSON, Lars
Lars Johansson Patentbyrå AB
Box 68
S-801 02 Gävle
SUÈDE

Date of mailing (day/month/year) 08 February 2001 (08.02.01)		
Applicant's or agent's file reference 99070 PCT		IMPORTANT NOTICE
International application No. PCT/SE00/01463	International filing date (day/month/year) 10 July 2000 (10.07.00)	Priority date (day/month/year) 21 July 1999 (21.07.99)
Applicant SUNDSTRÖM, Fred		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AU, KP, KR, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AG, AL, AM, AP, AT, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EA, EE, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OA, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on

08 February 2001 (08.02.01) under No. WO 01/09526

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. (41-22) 740.14.35</p>	<p style="text-align: center;">Authorized officer J. Zahra</p> <p>Telephone No. (41-22) 338.83.38</p>
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ENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 99070 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/SE 00/01463	International filing date (<i>day/month/year</i>) 10 July 2000	(Earliest) Priority Date (<i>day/month/year</i>) 21 July 1999
Applicant Sundström Fred		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).
2. ☐ Unity of invention is lacking (See Box II).
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
 - ☐ filed with the international application.
 - ☐ furnished by the applicant separately from the international application,
 - ☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
 - ☐ transcribed by this Authority.
4. With regard to the title, ☒ the text is approved as submitted by the applicant.
 - ☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - ☒ the text is approved as submitted by the applicant.
 - ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
 - Figure No. 1 ☒ as suggested by the applicant. ☐ None of the figures.
 - ☐ because the applicant failed to suggest a figure.
 - ☐ because this figure better characterizes the invention.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/01463

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: F16B 27/00, B25B 23/08, B65D 73/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: F16B, B25B, B65B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2147873 A (SFS STADLER AG), 22 May 1985 (22.05.85), figures 3,4 --	1
A	US 3812961 A (MERRICK ET AL), 28 May 1974 (28.05.74), figures 1,4 --	1
A	US 4298121 A (OIDE ET AL), 3 November 1981 (03.11.81), figure 2 -----	1

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

17 October 2000

Date of mailing of the international search report

30 -10- 2000

Name and mailing address of the ISA:

Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Marita Öun / JA A
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT
Information on patent family members

03/10/00

International application No.

PCT/SE 00/01463

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
GB	2147873	A	22/05/85	AT	372383 A	15/10/84
				AT	378045 B	10/06/85
				DE	3436171 A,C	02/05/85
				DE	3448511 C	02/02/95
				FR	2553694 A,B	26/04/85
				GB	8426370 D	00/00/00
				AT	372483 A	15/01/87
				AT	383764 B	25/08/87

US	3812961	A	28/05/74	NONE		

US	4298121	A	03/11/81	NONE		

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 99070 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SE00/01463	International filing date (<i>day-month-year</i>) 10.07.2000	Priority date (<i>day-month-year</i>) 21.07.1999
International Patent Classification (IPC) or national classification and IPC ₇ F16B 27/00, B25B 23/08, B65D 73/00		
Applicant Sundström Fred		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 01.02.2001	Date of completion of this report 08.08.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Per-Olof Warnbo/EE Telephone No. 08-782 25 00

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/01463

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement) under article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig. _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/01463

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-4</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-4</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-4</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

GB, A 2 147 873, considered the most relevant of the documents cited in the Search Report, shows a magazine strip (1) for screws that has longitudinally spaced through holes (2) for screws (3) and is of a material which is compressible and/or abradable. The thickness D of the magazine strip extends over several turns of the thread of the screws (3) to be inserted so that the inserted screws are retained by way of several turns of the thread.

The claimed invention according to claim 1 differs from GB, A, 2 147 873 in that the length of the individual screw (12) is smaller than the depth of the framework (1) counted as the distance between said front and back sides (4,5). The spaced-apart bores (10) in the framework are delimited by endless limiting walls of a resilient, demolishable nature. Therefore, the claimed invention according to claim 1 is novel.

It cannot be considered obvious to a person skilled in the art to arrive at the claimed invention according to claim 1. Therefore, claimed invention involves an inventive step.

Dependent claims 2-4 disclose further features of the invention according to claim 1 and therefore satisfy the requirements of novelty and inventive step.

The industrial applicability is obvious.

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 February 2001 (08.02.2001)

PCT

(10) International Publication Number
WO 01/09526 A1

(51) International Patent Classification⁷: F16B 27/00, B25B 23/08, B65D 73/00

(21) International Application Number: PCT/SE00/01463

(22) International Filing Date: 10 July 2000 (10.07.2000)

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(26) Publication Language: English

(30) Priority Data:
9902749-2 21 July 1999 (21.07.1999) SE

(71) Applicant and

(72) Inventor: SUNDSTRÖM, Fred [SE/SE]; Rind 2466,
S-840 50 Gällö (SE).

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AB, Box 68, S-801 02 Gävle (SE).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

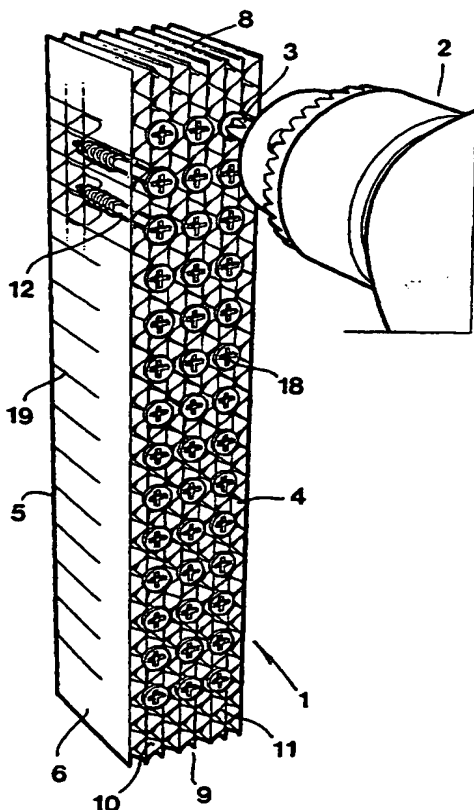
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

[Continued on next page]

(54) Title: MAGAZINE FOR SCREWS



(57) Abstract: The invention relates to a screw magazine which includes a form-stiff framework (1) having a front side (4) and a back side (5) between which a plurality of mutually spaced-apart bores (10) extend, each one of which is delimited by an endless limiting wall (11) of a resilient, demolishable nature and of which at least some house screws (12) located at a distance from each other. According to the invention, the length of the individual screw (12) is smaller than the depth of the framework (1) counted as the distance between said front and back sides (4, 5), a free tip of the individual screw being located at a certain distance inside the back side of the framework, as the same time as an end surface on the head of the individual screw (12) is situated in flush with the front side (4) of the framework.

2001/09526 A1



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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

MAGAZINE FOR SCREWS

Technical Field of the Invention

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This invention relates to a magazine for screws of the type that includes a shank with a thread and a head at one end of the shank, including a form-stiff framework with a front side and a back side, between which a plurality of mutually spaced-apart bores extend, which individually are delimited by an endless limiting wall of a resilient, demolishable nature, and of which at least certain house screws located at a distance from each other.

15 Background of the Invention

In industries and crafts as well as for domestic use, self-drilling screws for general fastening purposes are used in an increasing extension. Such screws include a specially designed tip in combination with a thin, sharp thread which entails that the screw may be fastened in existing work pieces without pre-drilled holes. The driving of the screws usually takes place by means of a drilling screwdriver, the rotatable tool (commonly denominated "bit") of which is applied in a most often cruciform seat in the head of the screw. Like conventional, non-self-drilling screws, screws of this type are usually stored higgledy-piggledy in capsules or storage boxes, e.g. of cardboard. This means that the screws have to be picked up one by one, either directly out of the storage box or possibly out of a pocket on the user's clothing so as to be individually applied by hand on the rotatable tool of the drilling screw driver. This tool may be magnetized per se in order to facilitate application and retention of the screws. Nevertheless, such manual application of the individual screws is a troublesome and delaying work. A special problem is inherent in self-drilling screws inasmuch as the user has to hold and guide the screw so that it is drawn into the work piece in the desired, usually perpendicular direction to the surface of the work piece without the aid of a pre-drilled hole. Rather frequently, it therefore happens that the screw

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sways when the driving operation should be initiated. This is something which additionally delays and makes the work in question more difficult.

A screw magazine of the initially generally mentioned kind is previously known by AT 378045. In this case, the screw magazine is tape-shaped and intended to co-operate with a feeding device belonging to a drilling machine or a drilling screwdriver, which feeding device includes two position-determining fences. These fences have the purpose of, at axial feed of the screw-carrying tape, providing for that the individual screw in the drawing in position thereof is oriented perpendicularly to the material, the magazine tape having the purpose of guiding the screws laterally. For this purpose, the screws in the known magazine are considerably longer than the depth of the magazine tape, the individual screw protruding from the front side as well as the back side of the magazine tape. In other words, the use of such screw magazines is limited to only such drilling screwdrivers including a feeding device for the feed of the screw-carrying tape.

Objects and Features of the Invention

The present invention aims at obviating the above-mentioned shortcoming of the previously known screw magazine and at providing an improved screw magazine. Therefore, a primary object of the invention is to provide a screw magazine which may be handled manually in the sense that the same does not need to co-operate with particular feeding devices, at which the magazine should be able to be stored in a structured way, for instance in articles of clothing, and if required taken out by the user to directly be applied against the material in which a screw is to be fastened. Another object is to provide a structurally simple magazine, which may be manufactured at low cost.

According to the invention, at least the primary object is attained by features defined in the characterizing clause of claim 1. Preferred embodiments of the invention are furthermore defined in the dependent claims.

Brief Description of the Appended Drawings

In the drawings:

- Fig 1 is a perspective view of a screw-housing magazine according to the invention, the magazine being visualised together with parts of a conventional drilling screw driver,
- Fig 2 is an enlarged cross-section through the screw magazine according to fig 1, and
- Fig 3 is a perspective view showing an alternative embodiment of the magazine.

Detailed Description of Preferred Embodiments of the Invention

In fig 1 and 2, which illustrate a first embodiment of the invention, 1 generally designates a magazine, while 2 designates a partially outlined drilling screw driver or drilling machine. In this machine, a so-called bit 3 constituting a replaceable, rotatable tool by means of which screws may be set in rotation, is included.

The magazine 1 consists of a framework, which in the example has a parallelepipedical basic shape. Thus, the framework has a plane front side 4, which is parallel to an opposite, plane back side 5. In addition, the framework has two opposite, plane and parallel long side surfaces 6, 7 as well as two opposite end portions 8, 9. Between the front side 4 and the back side 5, a plurality of mutually spaced-apart bores or holes 10 extend, each one of which being delimited by an endless limiting wall 11. In some of these bores 10, screws 12 are arranged.

In the embodiment shown, the individual screw 12 consists of a self-drilling screw of the type that in a traditional way includes a shank 13, a head 14 as well as a thread 16 extending backwards from a tip 15, which thread in practice is thin and sharp. In the example, the head 14 is cone-shaped and has a plane end surface 17 in which there is a cruciform seat 18 in which the tool 3 of the drilling screw driver may be applied. It is axiomatic that the head 14 has a larger diameter than the shank 13.

As may be seen in fig 1, the magazine may advantageously be made of a number of corrugated boards arranged side

by side. A simple corrugated board consists of two outer, plane paper webs between which there is an undulated paper web, the crests of which are agglutinated against the insides of the plane paper webs. Multilayer corrugated boards include two or more undulated paper webs which are internally agglutinated against common, plane paper webs. The shown magazine may either be made of simple corrugated boards which have been interconnected by agglutination or of one or more multilayer corrugated boards. In the case the magazine is made of corrugated board, the limiting walls 11 defining each individual bore 10 consist of a narrow portion of a plane paper web as well as a portion of a wave formation in the undulated paper web. By the fact that the limiting wall consists of comparatively thin paper, the wall becomes resilient and easy to demolish. However, together the various paper webs defining a large number of cavities, constitute a form-stiff and stable framework.

As may be seen in fig 2, the individual screw 13 is of a length being somewhat smaller than the height or depth of the magazine. When the screw is applied into the appurtenant bore with the plane surface 17 of the screw head in flush with the front side 4, the tip 15 of the screw will, therefore, be located inside the back side 5 at a certain distance therefrom. Therefore, as long as the screw is stored, the tip will not protrude from the back side. This is something which means that the plane back side 5 may be steadily pressed against a plane surface on the work piece in question. In this state, the head 14 does not protrude from the front side 4. This means that the screws do not risk to get stuck in various objects in the surroundings, e.g. in connection with storage in a clothing pocket or the like.

The individual screw may be applied in the appurtenant bore in various ways. For instance, it is possible to fasten the screw in the bore, the thread 16 partially cutting into the limiting wall 11. When the screw takes its final position in the bore, the upper portion of the limiting wall 11 has been pressed away by the cone-shaped head 14. By the fact that the material of the limiting wall has a certain elasticity, also the pressed-away portion of the limiting wall con-

tributes to hold the screw. Furthermore, the pressing-away of the upper portion of the limiting wall brings about a centring of the rear end of the screw, which in combination with the centring effect of the thread 16 entails that the screw is located mainly exactly perpendicularly to the back side 5, which is to be pressed against the work piece.

It is also feasible to press in the screw axially in the appurtenant bore, the surrounding, resilient wall 11 being possible to apply with an easy press fit against the thread of the screw.

In practice, both the bores housing the screws and the bores being empty may be open at opposite ends, as is shown in the drawings. However, it is also feasible to seal the bores, e.g. by means of a thin plastic film, which covers the back side and/or the front side of the magazine with the purpose of counteracting contamination of the interior of the magazine.

In the embodiment according to figures 1 and 2, a plurality of longitudinal rows of screws 12 are arranged beside each other. More precisely, the magazine includes three longitudinal rows of screws, the screws being arranged in transverse rows of three screws. These transverse rows of screws extend perpendicularly to the long side surfaces of the magazine. On both sides of the longitudinal rows of screws, there are rows of empty bores 10. In an analogous way, there is also at least one empty bore 10 between adjacent screws in one and the same longitudinal row. This means that the individual screw is from all sides surrounded by a number of empty bores in which the comparatively thick screw head 14 may be housed at storage as well as move in connection with the feeding out of the screw from the magazine.

It should be pointed out that the number of screws in the longitudinal rows as well as the transverse rows may vary most considerably.

In a preferred embodiment of the invention, at least one of the two opposite long side surfaces 6, 7 of the magazine is provided with markings 19, which display the axial position of the screws within the magazine. The lateral position of the individual screw has no substantial importance for

self-drilling screws by the fact that the screws in that case do not need to meet a pre-drilled hole. On the other hand, it may be important to show the axial position of the screws so that the screw, when being drawn in, will meet a scribed line or the like on the work piece. Advantageously, the markings 19 may consist of lines extending perpendicularly to the back side of the magazine. It is also possible to provide the outside of the magazine with various forms of printing, e.g. advertising printing.

The Function and Advantages of the Invention

When the magazine is to be used, it is pressed with the plane back side 5 thereof against the work piece in question. By the fact that this back side is plane, the magazine may in its entirety be held against the work piece in a steady and reliable way. In doing so, the stored screws 12 are fixed in a position where they extend perpendicularly to the pressing surface. When a separate, selected screw is to be fastened in the work piece, the rotatable tool 3 of the drilling screw driver 2 is applied into the screw head seat 18, and then the screw is set in rotation at the same time as it is manually pressed, at least initially, against the work piece. When the screw gets a foothold in the work piece, it is drawn with a large force into the work piece, the screw being fed out of the magazine. In relation to the driving force, the limiting wall 11, which surrounds the screw, exerts no appreciable resistance to feeding out. During the feeding out, the screw head 14 will therefore break down the surrounding limiting wall 11 substantially without resistance, as is clearly shown to the right in fig 2.

In this connection, it should be pointed out that conventional so-called bits have a limited length, and therefore they are only suitable for short, stored screws. Within the scope of the invention, the possibility of manufacturing considerably longer bits than the conventional ones is, however, envisaged, more precisely with the purpose of enabling driving of screws from a magazine without the chuck of the screw driver penetrating into the magazine.

A substantial advantage of the screw magazine according to the invention is that the rotatable tool, for instance a "bit", which is used to fasten the screw may be brought to engagement with the screw head in a simple and fast way at the same time as the screw is automatically kept controlled in the desired driving-in direction. In addition, the screws may be stored in a well-arranged and tidy way in the magazine. This means that many screws are quickly and easily accessed for the fastening tool at the same time as all annoying work of applying the individual screws to the fastening tool is eliminated. Furthermore, the magazine may be stored in a smooth way, for instance in clothing pockets.

In fig 3, an alternative embodiment of a magazine is shown, which includes only one single longitudinal row of screws 12. Also in this case, the magazine is distinguished by the fact that rows of empty bores 10 are arranged on both sides of a central row of bores in which screws are stored. The limiting walls or paper webs surrounding the central row of bores gives the magazine a width which is considerably larger than the width of only the central row of bores. This means that the back side of the magazine gets a width which is large enough for guaranteeing a firm pressing of the magazine against a work piece in spite of the fact that the magazine only includes one single, comparatively narrow row of screws.

In practice, the magazine according to the invention may have a length within the range of 100-300 mm, and a width within the range of 10-50 mm, the depth of the magazine varying depending on the length of the screws in question.

Feasible Modifications of the Invention

The invention is not solely restricted to the embodiments described and shown in the drawings. Although corrugated board is preferred as a starting material for the production of the screw magazine according to the invention, also other materials may be a possibility. It is, for instance, possible to use a comparatively high-porous board of cellular plastic, in which the holes or bores for receipt of screws are formed. At the same time as the cellular plastic gives the magazine form-stiffness, the material in the individual limiting walls

defining the holes is easy to demolish. Also other materials are feasible. Thus, it is only crucial that the screws are mutually spaced-apart a certain distance in the magazine at the same time as the limiting walls of the holes are possible to
5 demolish or give way without substantial resistance in connection with the driving of the screws.

Claims

1. Magazine for screws of the type that includes a shank with a thread and a head at one end of the shank, including a form-stiff framework (1) having a front side (4) and a back side (5) between which a plurality of spaced-apart bores (10) extend, each one of which is delimited by an endless limiting wall (11) of a resilient, demolishable nature, and of which at least some house screws (12) located at a distance from each other, c h a r a c t e r i z e d in that the length of the individual screw (12) is smaller than the depth of the framework (1) counted as the distance between said front and back sides (4,5), a free tip (15) of the individual screw (12) being located at a certain distance inside the back side (5) of the framework, at the same time as an end surface (17) of the head (14) of the individual screw (12) is situated essentially flush with the front side (4) of the framework.
2. Magazine according to claim 1, c h a r a c t e r i z e d in that a number of screws (12) are arranged in at least one longitudinal row having at least one empty bore (10) between adjacent, screw-housing bores in the row, rows of empty bores being arranged on both sides of the row of screws.
3. Magazine according to claim 1 or 2, c h a r a c t e r i z e d in that the framework (1) is made of a number of corrugated boards arranged side by side.
4. Magazine according to any one of the preceding claims, c h a r a c t e r i z e d in that markings (19) displaying the axial position of the screws (12) within the framework (1) are arranged along at least one long side surface of the framework extending between the front side (4) and the back side (5).

1/2

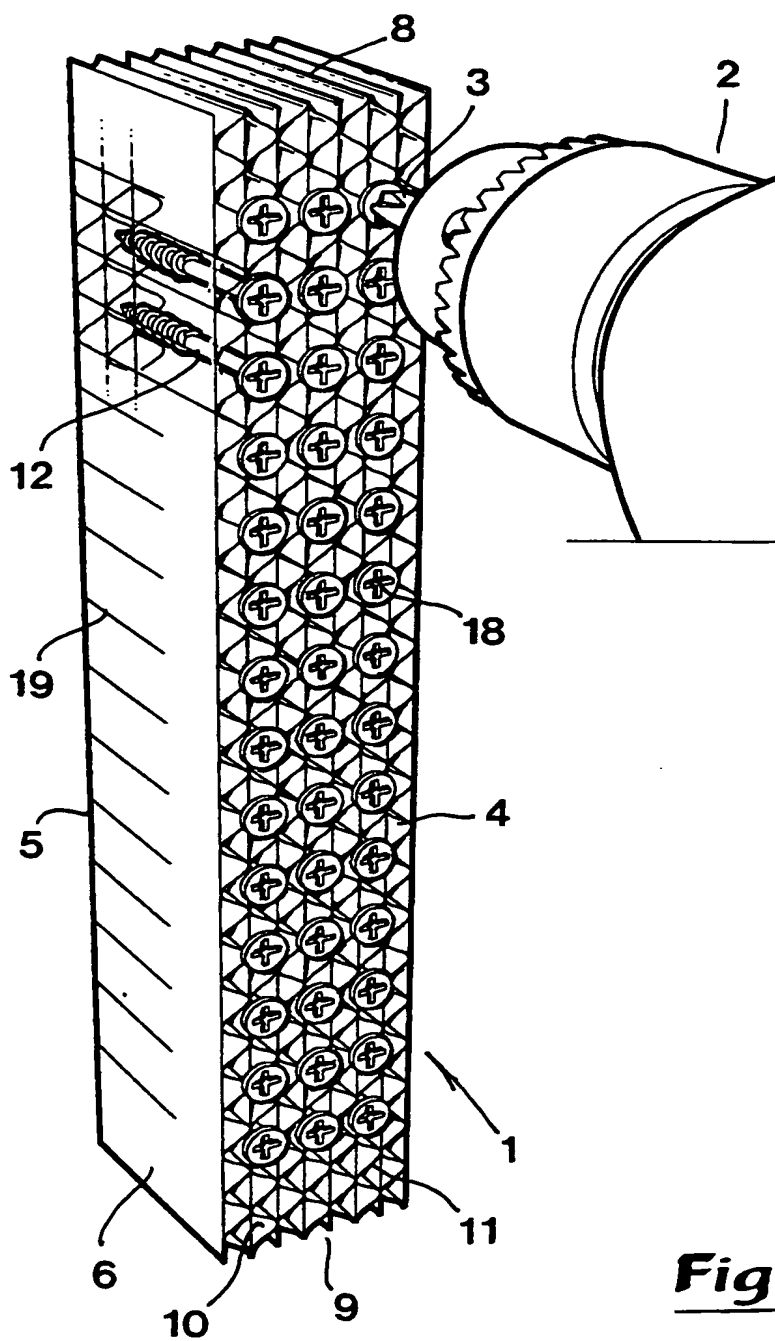


Fig 1

2 / 2

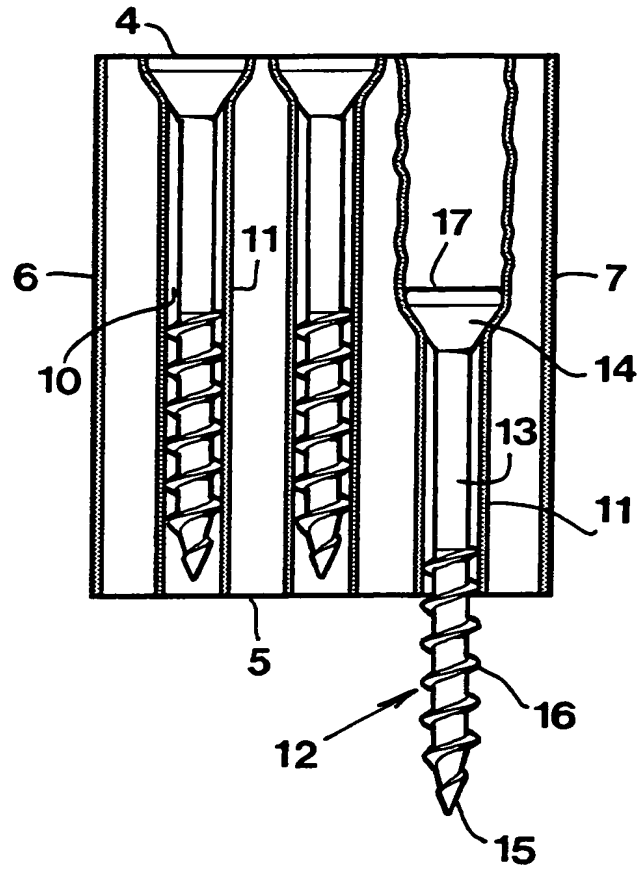


Fig 2

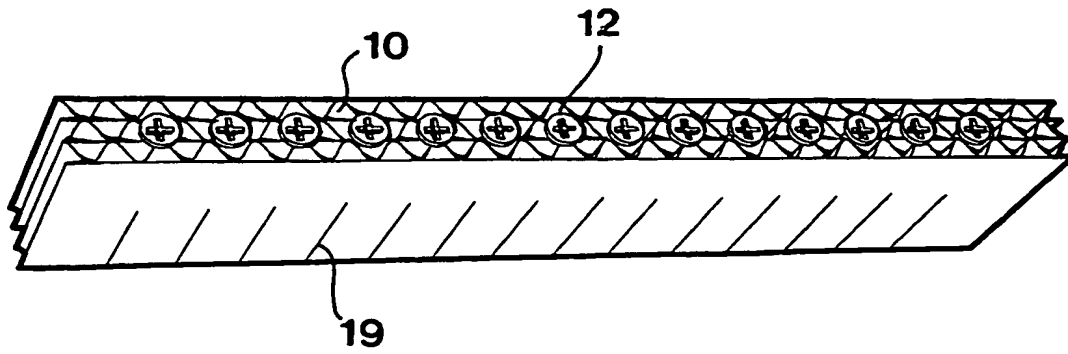


Fig 3

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REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving office use only	
International Application No.	PCT/SE 00 / 0 1 4 6 3
International Filing Date	10 -07- 2000
The Swedish Patent Office PCT International Application	
Name of receiving Office and "PCT International Application"	
Applicant's or agent's file reference (if desired) (12 characters maximum)	99070 PCT

Box No. I TITLE OF INVENTION	
"MAGAZINE FOR SCREWS"	
Box No. II APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	<input checked="" type="checkbox"/> This person is also inventor. Telephone No. Facsimile No. Teleprinter No.
SUNDSTRÖM Fred Rind 2466 SE-840 50 GÄLLÖ Sweden	
State (that is, country) of nationality: Sweden	State (that is, country) of residence: Sweden
This person is applicant for the purposes of: <input checked="" type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
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This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
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JOHANSSON Lars Lars Johansson Patentbyrå AB Box 68 SE-801 02 GÄVLE Sweden	+46 26 186320 +46 26 183604
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

10.07.2009

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked).

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- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

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| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LR Liberia |
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Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

10.07.2000

Box No. VI PRIORITY CLAIM					<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.	
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:				
		national application: country	regional application: regional Office	international application: receiving Office		
item (1) 21 July 1999 21.07.1999	9902749-2	Sweden				
item (2)						
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<input checked="" type="checkbox"/> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)						
<small>* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.</small>						
Box No. VII INTERNATIONAL SEARCHING AUTHORITY						
Choice of International Searching Authority (ISA) <small>(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):</small>		Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):				
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Box No. VIII CHECK LIST: LANGUAGE OF FILING						
This international application contains the following number of sheets: request : 3 ✓ description (excluding sequence listing part) : 7 ✓ claims : 1 ✓ abstract : 1 ✓ drawings : 2 ✓ sequence listing part of description : Total number of sheets : 14 ✓		This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input checked="" type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):				
Figure of the drawings which should accompany the abstract: 1		Language of filing of the international application: Swedish				
Box No. IX SIGNATURE OF APPLICANT OR AGENT						
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request). Gävle, July 7, 2000  Lars Johansson						

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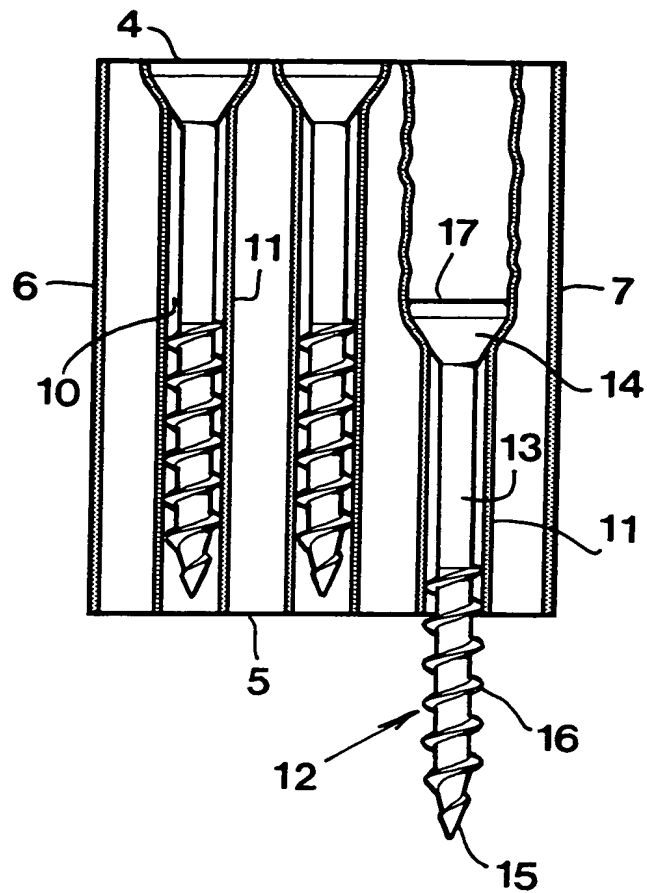


Fig 2

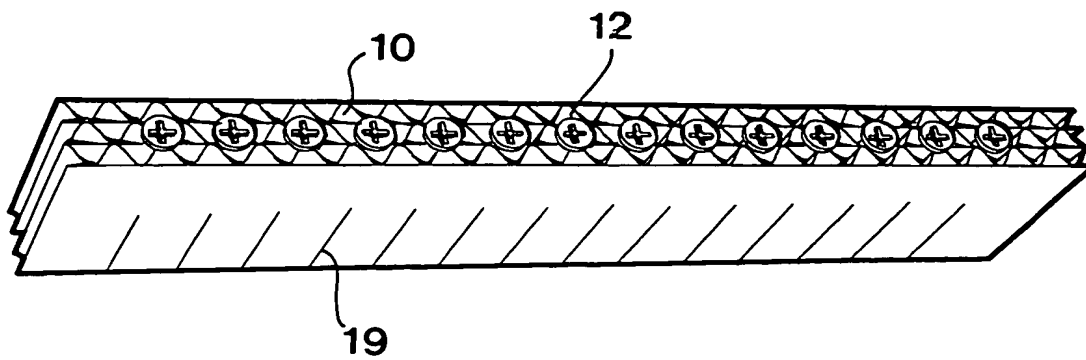


Fig 3

MAGASIN FÖR SKRUVAR

Uppfinningens tekniska område

Denna uppfinning hänför sig till ett magasin för skruvar
5 av det slag som inbegriper ett skaft med en gänga och en skalle
vid skaftets ena ände, innefattande en formstyv stomme med en
frontsida och en baksida mellan vilka sträcker sig en mångfald
sinsemellan åtskilda lopp, vilka var för sig avgränsas av en
ändlös begränsningsvägg av eftergivlig, demolerbar natur, och
10 av vilka åtminstone vissa upptar skruvar lokaliserade på av-
stånd från varandra.

Teknikens ståndpunkt

Inom industri och hantverk såväl som för hemmabruk an-
15 vänds i ökande utsträckning självborrande skruvar för allmänna
anfästningsändamål. Dylika skruvar inbegriper en specialutfor-
mad spets i kombination med en tunn, skarp gängkam som medför
att skruven kan dras fast i förekommande arbetsstycken utan
förborrade hål. Fastdragningen av skruvarna sker vanligtvis med
20 hjälp av en skruvdragare vars roterbara verktyg (gemenligen be-
nämnt "bit") appliceras i ett oftast korsformigt säte i skru-
vens skalle. I likhet med konventionella, icke självborrande
skruvar förvaras skruvar av detta slag vanligen huller om bul-
ler i kapslar eller förvaringslådor, t ex av kartong. Detta in-
25 nebär att skruvarna måste plockas upp en efter en antingen di-
rekt ur förvaringslådan eller eventuellt ur en ficka på använ-
darens klädedräkt för att därefter individuellt appliceras för
hand på skruvdragarens roterbara verktyg. Detta verktyg kan i
och för sig vara magnetiserat för att underlätta applicering
30 och kvarhållning av skruvarna. Icke desto mindre är dylik,
manuell applicering av de enskilda skruvarna ett besvärligt och
sinkande göromål. Ett särskilt problem vidlåder just själv-
borrande skruvar såtillvida att användaren måste hålla och
styra skruven så att denna dras in i arbetsstycket i önskad,
35 vanligtvis rätvinklig riktning mot arbetsstyckets yta utan
hjälp av något förborrat hål. Tämligen frekvent inträffar där-
för att skruven vinglar då fastdragningsoperationen skall ini-
tieras; något som ytterligare sinkar och försvårar det aktuella
arbetet.

Ett skruvmagasin av ingressvis allmänt angivet slag är tidigare känt genom AT 378045. I detta fall är skruvmagasinet bandformigt och avsett att samverka med en till en bormaskin eller skruvdragare hörande mataranordning, vilken inbegriper två lägesbestämmande anhåll. Dessa anhåll har till uppgift att vid axiell frammatning av det skruvbärande bandet tillse att den enskilda skruven i sitt idragningsläge orienteras vinkelrätt mot underlaget, varvid magasinet har till uppgift att styra skruvarna i sidled. För detta ändamål är skruvarna i det kända magasinet betydligt längre än magasinet djup, varvid den enskilda skruven sticker ut från såväl frontsidan som baksidan av magasinet. Med andra ord är användningen av dylika skruvmagasin begränsad till enbart sådana skruvdragare som inbegriper en mataranordning för frammatning av det skruvbärande bandet.

Uppfinningens syften och särdrag

Föreliggande uppfinning tar sikte på att undanröja ovan nämnda brist hos det tidigare kända skruvmagasinet och skapa ett förbättrat skruvmagasin. Ett grundläggande syfte med uppfinningen är därför att skapa ett skruvmagasin som kan hanteras manuellt i den meningen att detsamma ej behöver samverka med särskilda mataranordningar, varvid magasinet skall kunna förvaras på ett strukturerat sätt, exempelvis i klädespersedlar, och vid behov plockas fram av användare för att direkt appliceras mot det underlag i vilket en skruv skall dras fast. Ett ytterligare syfte är att skapa ett konstruktivt enkelt magasin som låter sig tillverkas till låg kostnad.

Enligt uppfinningen nås åtminstone det grundläggande syftet medelst de särdrag som är definierade i patentkravets 1 kännetecknande del. Fördelaktiga utföranden av uppfinningen är vidare angivna i de osjälvständiga patentkraven.

Kort beskrivning av bifogade ritningar

På ritningarna är:

Fig 1 en perspektivvy av ett skruvupptagande magasin enligt uppfinningen, varvid magasinet åskådliggörs tillsammans med delar av en konventionell skruvdragare,

- Fig 2 en förstoraad tvärsektion genom skruvmagasinet enligt fig 1, och
Fig 3 en perspektivvy visande ett alternativt utförande av magasinet.

5

Detaljerad beskrivning av föredragna utföranden av uppfinningen

I fig 1 och 2, som illustrerar ett första utförande av uppfinningen, betecknar 1 generellt ett magasin, medan 2 betecknar en partiellt antydd skruvdragare eller bormaskin. I denna ingår en så kallad bit 3 som utgör ett utbytbart, roterbart verktyg med vars hjälp skruvar kan försättas i rotation.

Magasinet 1 utgörs av en stomme som i exemplet har parallelepipedisk grundform. Sålunda uppvisar stommen en plan frontside 4 som är parallell med en motsatt, plan baksida 5. Härjämte uppvisar stommen två motsatta, plana och parallella långsidoytor 6, 7 samt två motsatta gavlar 8, 9. Mellan frontsidan 4 och baksidan 5 sträcker sig en mångfald sinsemellan åtskilda lopp eller hål 10, vilka var för sig avgränsas av en ändlös begränsningsvägg 11. I vissa av dessa lopp 10 är anordnade skruvar 12.

I det visade utförandeexemplet utgörs den enskilda skruven 12 av en självborrande skruv av det slag som på traditionellt sätt inbegriper ett skaft 13, en skalle 14 samt en bakåt från en spets 15 sig sträckande gängkam 16, vilken i praktiken är tunn och skarp. I exemplet är skallen 14 konisk och uppvisar en plan ändyta 17 i vilken finns ett korsformigt säte 18 i vilket skruvdragarens verktyg 3 kan appliceras. Det är axiomatiskt att skallen 14 har större diameter än skaftet 13.

Såsom framgår av fig 1 kan magasinet med fördel vara förfärdigat av ett antal sida vid sida anordnade wellpappskivor. En enkel wellpappskiva består av två yttre, plana pappersbanor mellan vilka finns en vågformig pappersbana, vars vågtoppar är fastlimmade mot insidorna av de plana pappersbanorna. Flerskiktiga wellpappskivor inbegriper två eller flera vågformiga pappersbanor som invändigt är fastlimmade mot gemensamma, plana pappersbanor. Det visade magasinet kan vara förfärdigat av antingen enkla wellpappskivor som förbundits inbördes genom limning eller av en eller flera flerskiktiga wellpappskivor. I det fall magasinet är förfärdigat av wellpapp utgörs de be-

gränsningsväggar 11 som avgränsar varje enskilt lopp 10 av dels ett smalt parti av en plan pappersbana, dels ett parti av en vågformation i den vågformiga pappersbanan. I och med att begränsningsväggen utgörs av jämförelsevis tunt papper blir väggen eftergivlig och lätt demolerbar. Tillsammans bildar emellertid de olika pappersbanor som avgränsar ett stort antal hålrum, en formstyv och stabil stomme.

Såsom framgår av fig 2 har den enskilda skruven 13 en längd som är något kortare än magasinets höjd eller djup. När skruven appliceras i tillhörande lopp med skruvskallens plana yta 17 i flukt med fronsidan 4 kommer skruvens spets 15 därför att lokaliseras innanför baksidan 5 på visst avstånd från denna. Så länge skruven är magasinerad kommer spetsen därför ej att sticka ut från baksidan; något som innebär att den plana baksidan 5 kan stadigt ansättas mot en plan yta på förekommande arbetsstycke. I detta tillstånd sticker ej heller skallen 14 ut från fronsidan 4. Detta innebär att skruvarna ej riskerar att fastna i olika objekt i omgivningen, t ex i samband med förvaring i en persedelficka eller liknande.

Den enskilda skruven kan appliceras i tillhörande lopp på olika sätt. Exempelvis är det möjligt att skruva fast skruven i loppet, varvid gängkammen 16 partiellt skär in i begränsningsväggen 11. Då skruven intar sitt slutläge i loppet har det övre partiet av begränsningsväggen 11 pressats undan av den koniska skallen 14. I och med att materialet i begränsningsväggen har viss elasticitet medverkar även det undanpressade partiet av begränsningsväggen till att fasthålla skruven. Dessutom åstadkommer undanpressningen av begränsningsväggens övre parti en centrering av skruvens bakre ände som i kombination med gängkammens 16 centrerande verkan medför att skruven lokaliseras i huvudsak exakt vinkelrätt mot den baksida 5 som skall ansättas mot arbetsstycket.

Det är även tänkbart att pressa in skruven axiellt i tillhörande lopp, varvid den omgivande, eftergivliga begränsningsväggen 11 kan anläggas med lätt presspassning mot skruvens gängkam.

I praktiken kan både de lopp som upptar skruvar och de lopp som är tomma vara öppna vid motsatta ändar, såsom visas på ritningarna. Det är emellertid även tänkbart att försluta

loppen, t ex medelst en tunn plastfilm som täcker baksidan och/eller fronsidan på magasinet i syfte att motverka nedsmutsning av magasinets inre.

Vid utförandet enligt fig 1 och 2 är flera längsgående rader av skruvar 12 anordnade bredvid varandra. Närmare bestämt inbegriper magasinet tre längsgående skruvrader, varvid skruvarna är arrangerade i tvärgående rader om tre skruvar. Dessa tvärgående skruvrader sträcker sig vinkelrätt mot magasinets långsidoytor. På ömse sidor av de längsgående skruvraderna finns rader av tomma lopp 10. På analogt sätt finns även åtminstone ett tomt lopp 10 mellan närbelägna skruvar i en och samma längsgående rad. Detta innebär att den enskilda skruven allsidigt omges av ett antal tomma lopp i vilka den jämförelsevis grova skruvskallen 14 kan hårbärgeras vid lagring samt röra sig i samband med utmatning av skruven ur magasinet.

Det må påpekas att antalet skruvar i såväl de längsgående raderna som de tvärgående raderna kan variera högst avsevärt.

Vid ett föredraget utförande av uppfinningen är åtminstone den ena av magasinets båda motsatta långsidoytor 6, 7 försedd med markeringar 19, som visar skruvarnas axiella position inuti magasinet. Den enskilda skruvens position i sidled saknar väsentlig betydelse då det gäller självborrande skruvar i och med att skruvarna då icke behöver träffa ett förborrat hål. Däremot kan det vara betydelsefullt att visa skruvarnas axiella position för att skruven vid idragning skall träffa en rits eller liknande på arbetsstycket. Med fördel kan markeringarna 19 utgöras av streck som sträcker sig vinkelrätt mot magasinets baksida. Det är även möjligt att förse magasinets utsida med olika former av tryck, t ex reklamtryck.

Uppfinningens funktion och fördelar

Då magasinet skall användas ansätts detsamma med sin plana baksida 5 mot det aktuella arbetsstycket. I och med att denna baksida är plan kan magasinet i sin helhet hållas an mot arbetsstycket på ett stadigt och tillförlitligt sätt. Härvid hålls de magasinerade skruvarna 12 fast i ett läge där de sträcker sig vinkelrätt mot ansättningsytan. Då en enskild, utvald skruv skall dras fast i arbetsstycket appliceras skruvdra-

garens 2 roterbara verktyg 3 i skruvskallens säte 18, varefter skruven försätts i rotation samtidigt som den åtminstone initialt anpressas på manuell väg mot arbetsstycket. Då skruven fått fäste i arbetsstycket dras densamma med stor kraft in i arbetsstycket, varvid skruven matas ut ur magasinet. I förhållande till fastdragningskraften utövar den begränsningsvägg 11 som omger skruven inget nämnvärt motstånd mot utmatning. Vid utmatningen kommer därför skruvskallen 14 att väsentligen motståndslöst demolera den omgivande begränsningsväggen 11 såsom tydligt visas till höger i fig 2.

I detta sammanhang skall påpekas att konventionella så kallade bits har begränsad längd, varför de passar enbart för korta, magasinerade skruvar. Inom ramen för uppfinningen förutses dock möjligheten att tillverka betydligt längre bits än de konventionella, närmare bestämt i syfte att möjliggöra fastdragnings av skruvar ur ett magasin utan att skruvdragarens chuck tränger in i magasinet.

En väsentlig fördel med det uppfinningsenliga skruvmagasinet är att det roterbara verktyg, tex en "bit", som används för att dra i skruven kan bringas till ingrepp med skruvskallen på ett enkelt och snabbt sätt samtidigt som skruven automatiskt hålls styrd i önskad indrivningsriktning. Härjämte låter sig skruvarna förvaras på ett välordnat och propert sätt i magasinet. Detta innebär att många skruvar blir snabbt och enkelt åtkomliga för åtdragningsverktyget samtidigt som allt besvärande arbete att applicera de enskilda skruvarna på åtdragningsverktyget elimineras. Vidare kan magasinet förvaras på ett smidigt sätt, exempelvis i persedelfickor.

I fig 3 visas ett alternativt utförande av ett magasin som inbegriper blott en enda längsgående rad av skruvar 12. Även i detta fall utmärker sig magasinet genom att rader av tomma lopp 10 är anordnade på ömse sidor av en central rad av lopp i vilka skruvar är magasinerade. De begränsningsväggar eller pappersbanor som omger den centrala raden av lopp förlämnar magasinet en bredd som är betydligt större än bredden hos enbart den centrala raden av lopp. Detta innebär att magasinets baksida erhåller en bredd som är tillräckligt stor för att säkerställa stadig ansättning av magasinet mot ett arbetsstycke

trots att magasinet inbegriper blott en enda, jämförelsevis smal rad av skruvar.

I praktiken kan det uppfinningsenliga magasinet ha en längd inom området 100-300 mm, och en bredd inom området 10-50 mm, varvid magasinet djup varierar i beroende av längden hos de aktuella skruvarna.

Tänkbara modifikationer av uppfinningen

Uppfinningen är ej begränsad blott till de beskrivna och på ritningarna visade utförandena. Ehuru just wellpapp föredras såsom utgångsmaterial för tillverkning av det uppfinningsenliga skruvmagasinet kan även andra material komma ifråga. Exempelvis är det möjligt att använda en företrädesvis högporös cellplast-skiva i vilken formas hål eller lopp för mottagande av skruvar. Samtidigt som cellplast förlämnar magasinet formstyvhet är materialet i de enskilda begränsningsväggar som avgränsar hålen lätt demolerbart. Även andra material är tänkbara. Väsentligt är sålunda enbart att skruvarna är inbördes åtskilda ett visst stycke i magasinet samtidigt som hålens begränsningsväggar skall kunna demoleras eller ge efter utan väsentligt motstånd i samband med skruvarnas fastdragning.

Patentkrav

1. Magasin för skruvar av det slag som inbegriper ett skaft med en gänga och en skalle vid skaftets ena ände, innefattande en
5 formstyv stomme (1) med en fronsida (4) och en baksida (5) mellan vilka sträcker sig en mångfald sinsemellan åtskilda lopp (10), vilka var för sig avgränsas av en ändlös begränsningsvägg (11) av eftergivlig, demolerbar natur, och av vilka åtminstone
10 vissa upptar skruvar (12) lokaliserade på avstånd från varandra, k ä n n e t e c k n a t därav, att den enskilda skruvens (12) längd är mindre än stommens (1) djup räknat såsom avståndet mellan sagda front- och baksidor (4, 5), varvid en fri spets (15) på den enskilda skruven (12) är lokaliserad på visst avstånd innanför stommens baksida (5), samtidigt som en ändyta
15 (17) på den enskilda skruvens (12) skalle (14) är belägen väsentligen i flukt med stommens fronsida (4).

2. Magasin enligt krav 1, k ä n n e t e c k n a t därav, att ett antal skruvar (12) är anordnade i åtminstone en längsgående
20 rad med åtminstone ett tomt lopp (10) mellan närbelägna, skruvupptagande lopp i raden, varvid rader av tomma lopp är anordnade på ömse sidor av raden av skruvar.

3. Magasin enligt krav 1 eller 2, k ä n n e t e c k n a t därav, att stommen (1) är förfärdigad av ett antal sida vid
25 sida anordnade wellpappskivor.

4. Magasin enligt något av föregående krav, k ä n n e t e c k n a t därav, att utmed åtminstone en mellan fronsidan
30 (4) och baksidan (5) sig sträckande långsidoyta på stommen är anordnade markeringar (19) som visar skruvarnas (12) axiella placering inuti stommen (1).

Sammandrag

Uppfinningen hänför sig till ett skruvmagasin som innefattar en formstyv stomme (1) med en frontsida (4) och en baksida (5) mellan vilka sträcker sig en mångfald sinsemellan åtskilda lopp (10), vilka var för sig avgränsas av en ändlös begränsningsvägg (11) av eftergivlig, demolerbar natur, och av vilka åtminstone vissa upptar skruvar (12) lokaliserade på avstånd från varandra. Enligt uppfinningen är den enskilda skruvens (12) längd mindre än stommens (1) djup räknat såsom avståndet mellan sagda front- och baksidor (4, 5), varvid en fri spets på den enskilda skruven (12) lokaliseras på visst avstånd innanför stommens baksida, samtidigt som en ändyta på den enskilda skruvens (12) skalle lokaliseras i flukt med stommens frontsida (4).

Publikationsbild: Fig 1.